



Bring the fun back to HS STEM assessment

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**The primary purpose
of assessment and
evaluation is to
improve student
learning**



- What are:
- Assessment **for** learning
- Assessment **as** Learning
- Assessment **of** Learning



- **Assessment for Learning**
- **The ongoing process of gathering and interpreting evidence about student learning for the purpose of determining where students are in their learning, where they need to go, and how best to get there**



- **Assessment as Learning**
- **The process of developing and supporting student metacognition. Students are actively engaged in the assessment process; that is, they monitor their own learning**



- **Assessment of Learning**
- **The process of collecting and interpreting evidence for the purpose of summarizing learning at a given point in time, to make judgements about the quality of student learning on the basis of established criteria, and to assign a value to represent that quality.**





**KEEP
CALM
THERES NO
TESTS
ANYMORE**



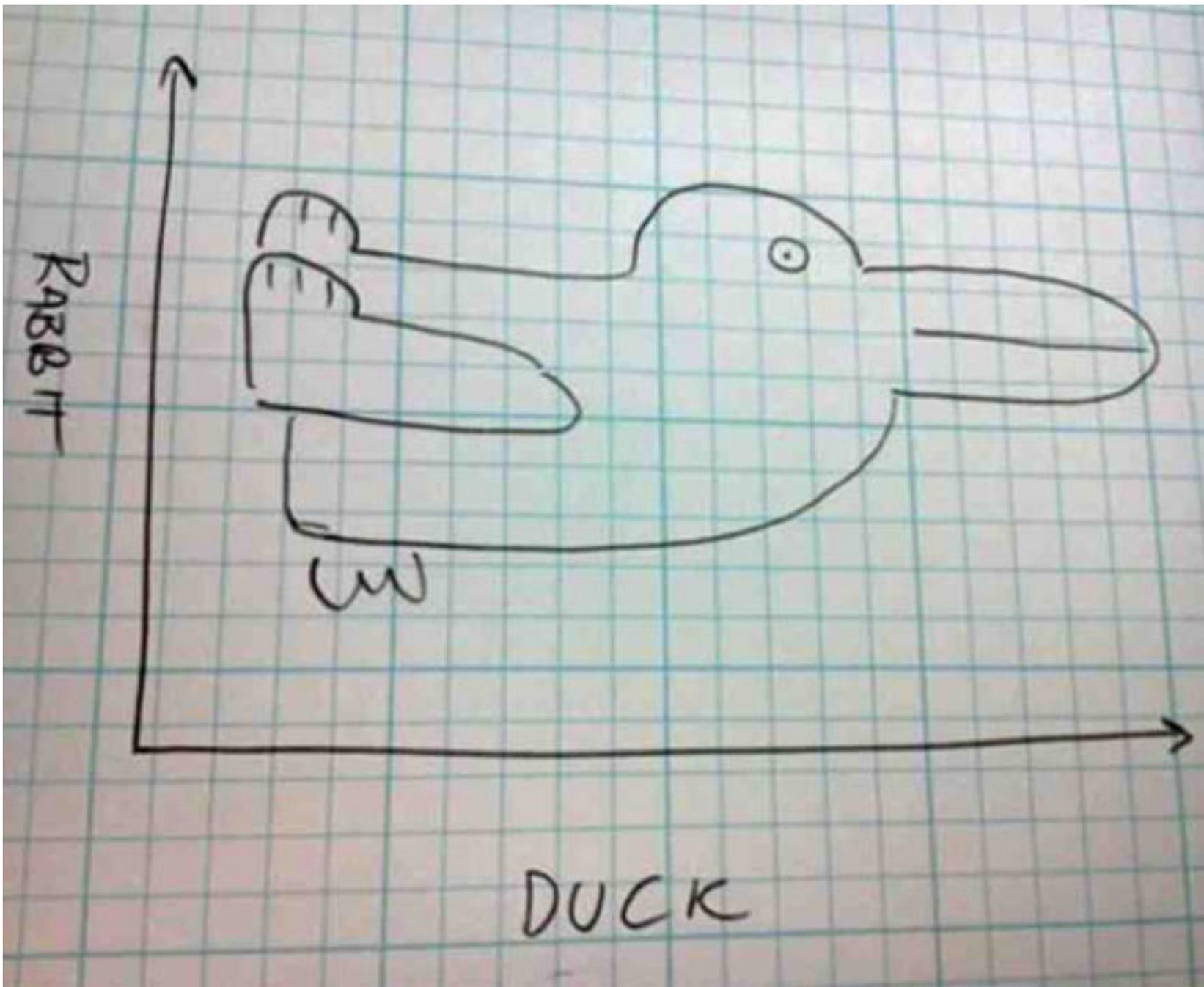
Embracing the

PROCESS

NOT

Just the *Product*





TASK 1

- How long does it take for a hersey kiss to dissolve in your mouth?
- Work with a buddy to figure this out?



TASK 2

- How do you assess the learning here?

Lab write up

Questions answered.....

For me it's the process of doing the experimenting





■ **Performance Tasks for Chemistry**

■ Mr Mole Business Proposal

■

Gas Laws Presentation

■

Crystal Exhibit

■ Particle Comic Strip

■

Ester Bath Bomb



Business Proposal to Mr. Mole

Your task:

Come up with a product and a business model that can be expressed as an equation. The components of your product are the reactants and your product is what is produced when all reactants combine in the appropriate ratios. At least one of the components in your equation must be a number other than one. Be sure to include profits and expenses in your equation.

Your detailed business proposal must include:

A persuasive cover outlining your product and business model

Supporting argument(s) to convince Mr. mole to finance your proposal

A business equation describing all reactants and products

Supporting data tables (include potential profits and expenses)

Sample calculations of formulas used in the data table

Business ideas for your proposal:

Manufacturing of a product

Cooking/ food service

Agriculture

Mining

Other (Your choice)



Checklist

Unique or novel product is presented in the cover letter using effective persuasive language

Supporting arguments in the cover letter make sense and are highly influential

Business equation is present and clearly outlines all the variables present in the cover letter

A business equation with ratios more complex than 1:1 is present and all variables are present in the cover letter

Supporting data table contains all variables stated in the equation

Business proposal is concise, organized so it is easy to read, and word processed

Main themes	main question	final project
Atoms and bonding	Chemical composition of compounds and naming	
Chemical reactions and law of conservation of matter	Everything as a reactant can be found as a product	
Mole unit and conversion	Balancing equations and composition	
Stoichiometry ratios	Keeping ratios consistent throughout increases and decreases	



Main themes	main question	final project



- **Performance Tasks for Math**
- **Sequences and Series Art Project**
- **Drawing/Art** – Follow the instructions for the project to create a visual representation of a sequence/series. Sketch out rough drafts to make sure you're on the right track. Once you are ready, take your time in creating a final product that incorporates color and creativity. While I do not expect all of you to be supreme artists, your product will be graded on accuracy and execution. Please create a product that you are proud of and will enjoy showing the class.



- **Performance Based Exams**
- **Performance based testing is a form of testing that requires students to perform a task rather than an answer from an already made list.**
- **Hands on Lab finals in all classes of high school STEM**



- **Station 1**

- **Procedure:**

- 1. Find the mass of your piece of chalk
- 2. In the parking lot write your name on the ground with letters at least 30 cm high
- 3. Find the mass of your chalk after writing your name

- **Calculations:**

- 1. Determine the mass of chalk used to write your name on the ground.
- 2. Determine the molar mass of calcium carbonate.
- 3. Determine the number of moles used to write your name.



**PERSONALIZED LEARNING
IS MESSY**



BUT SO WORTH IT



Rethink assessment in high school math
and sciences....

What really shows the students are
learning.....

